Physician Spotlight

Bryan Frain, MD

Bryan Frain, MD received his BS from the University of Maryland and his MD from Tulane University School of Medicine. He completed his internship and residency at the Medical University of South Carolina. He is board certified in Internal Medicine, Cardiology and Electrophysiology, and specializes in atrial fibrillation and innovative electrophysiology. Dr. Frain recently joined Carolina Arrhythmia Consultants.

John Spratt, MD

John Spratt, MD received his BA from the University of Colorado, his MS from the University of Missouri and his MD from Washington University School of Medicine in St. Louis, Missouri. He completed his residency and fellowship at Duke University Medical Center. Board certified in Thoracic and General Surgery, Dr. Spratt is a cardiothoracic surgeon with Charleston Thoracic & Cardiovascular Surgery.

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Bryan Frain, MD
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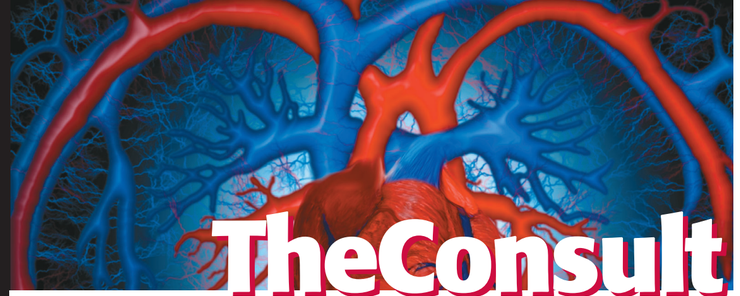

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Sleep Apnea and Heart Disease

Snoring may be more than a nighttime nuisance – it could be a warning sign for heart disease. Snoring and daytime sleepiness are symptoms of obstructive sleep apnea (OSA), one of the most common sleep disorders caused when the relaxed upper windpipe collapses during sleep, resulting in brief strangulation episodes. This in turn causes blood oxygen levels to plummet and can trigger a chain reaction, resulting in an adrenalin rise, increased pulmonary pressure and possible arrhythmias (atrial fibrillation).

While the link between sleep apnea and cardiac morbidity indicators like hypertension and obesity has long been recognized, recent studies suggest the impact of sleep apnea on heart disease may be more direct and significant. Furthermore, effective OSA treatment in these patients can reduce the risk of heart disease without pharmacologic or invasive interventions.

One study in Sweden followed 308 middle-aged adults who had been evaluated for sleep apnea but were free of any heart disease. One third of the cohort (105) had documented obstructed sleep apnea and were offered standard treatments such as continuous airway pressure (CPAP), with treatment being ineffective for 65 of those. Over the next seven years, 16% of patients with sleep apnea developed coronary artery disease compared to five percent of those without sleep apnea. Among the patients not responding to OSA treatment, coronary artery disease was diagnosed in 25% versus only four percent of those effectively treated.

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The study concluded that OSA raised the risk of heart disease by five fold, regardless of age, gender, high blood pressure, diabetes or current smoking, and effective sleep apnea treatment reduced the risk by almost two-thirds, suggesting that even mild OSA seems to have a substantial effect on coronary artery disease risk.

The cardiac effects of OSA may include complex arrhythmias as well as septal-wall thickening and other cardiac remodeling effects, yet these structural changes appear to reverse with CPAP therapy, according to research results published in the Journal of the American College of Cardiology (April 2006). The study found that six months of CPAP therapy in OSA patients resulted in significant improvements in heart rate, stroke volumes, RV dimensions and wall motion, pulmonary artery pressure, systolic and diastolic blood pressure and velocities at the mitral and tricuspid valves, without any changes in body mass index to account for improvements. Therapeutic effects of CPAP mirror those of Beta-blockers for heart failure patients but are achieved nonpharmacologically.

While sleep apnea is already extremely prevalent, and is becoming even more so as obesity rates rise, it remains underdiagnosed. According to Toby Dawson, MD, medical director of the Roper St. Francis Sleep/Wake Disorder Center, sleep apnea affects some 10 million people. As research continues to correlate OSA and daytime sleepiness with compromised cardiac hemodynamic performance, clinicians should not take complaints of daytime sleepiness lightly. "A sleep history and possible sleep study to rule out sleep apnea needs to be considered in three patient populations: those who present with difficult to control hypertension; those with atrial fibrillation without any prior coronary artery disease; and in patients with depressive-like symptoms," Dr. Dawson says. "Not many therapies can claim to be totally curative, but sleep apnea patients placed on CPAP almost always return to normal physiological status. Treatment can be completely effective."

Antiplatelet Therapy Extended for Drug-eluting Stents

There is new consensus among cardiologists, general surgeons, dentists and the FDA that duel antiplatelet therapy (aspirin plus clopidogrel) for patients with drug-eluting stents (DES) be continued for at least one year. Recent studies have shown that patients who stop taking clopidogrel (Plavix) at six or 12 months post-DES face a significantly higher risk of clotting, which in turn increases risk of death or heart attack, than do patients who continue the therapy. In response, the American Heart Association, the American College of Cardiology, the Society for Cardiovascular Angiography and Interventions, the American College of Surgeons and the American Dental Association all support extending Plavix for one year.

"The take-home message is that patients and their primary care physicians should consult with the cardiologist before stopping Plavix," says Ken Hanger, MD, interventional cardiologist with Roper St. Francis Heart & Vascular Center. "Drug-eluting stents are still extremely effective at preventing restenosis, more so than bare-metal stents, but antiplatelet compliance is key."

The following guidelines are recommended:

- Physicians should discuss the need for one year of antiplatelet therapy prior to stent implantation.
- Bare-metal stents should be considered for patients who are unable or unlikely to continue Plavix for one year or more, either because of the drug's expense or the anticipated need for other surgery.
- Healthcare providers should contact the patient's cardiologist before stopping Plavix.
- Elective surgical procedures should be delayed until one month after 12 months of dual antiplatelet therapy for post-DES patients.

New Pneumatic Medical Technology for Peripheral Vascular Disease

The Roper St. Francis Heart & Vascular Center is certified to prescribe the NormaTec Pneumatic Compression Device (PCD) to appropriate patients suffering from edema in upper and lower extremities. This new technology uses external dynamic pneumatic compression to treat edema, giving practitioners clinical flexibility to non-invasively and safely treat many varieties of peripheral vascular disorders.

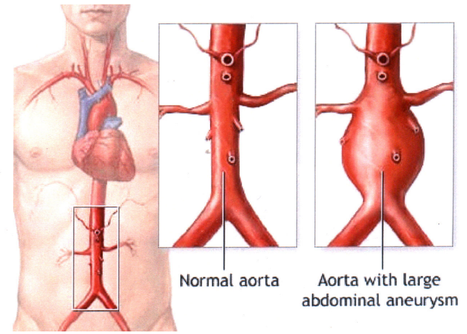
The NormaTec PCD, developed in 2002, is an FDA cleared, state-of-the-art technology that operates with multi-cell inflatable boots (or sleeves) placed around the legs or arms, which are rhythmically inflated and deflated to carefully prescribed pressures. The equipment functions as a "muscle pump" in the extremity. Stagnant fluid in the affected limb is promptly mobilized via the patented Peristaltic Pulse pneumatic waveform, which dynamically decongests engorged tissues. By simulating normal physiology, using the concepts of dynamic compression produced by the 'muscle pump' of the limb, directionality of flow occurring in the venous and lymphatic one-way valves, and effective movement of fluids as seen in peristalsis, the NormaTec PCD can effectively force fluid from the edematous tissues and rapidly reduce swelling and induration.

There are unique treatment parameters included in the software of the PCD—pulse pressure, pulsing time and rest time-which are determined and programmed by the healthcare practitioner. This allows for individual cell control and customization for each patient's specific medical condition. The practitioner also prescribes the length of each treatment session (Treatment Time), which the patient enters into the device at home each time it is used.

"By helping remove excess extremity fluid, this technology allows for better wound healing, improved ability to ambulate and decreased discomfort in the affected extremity," says Lori Edgar, FNP. "The fact that patients use the pump on their own schedule, in the comfort and privacy of their home, also helps with compliance."

Roper St. Francis Heart & Vascular Center is the only Center in the South that currently offers the Norma Tec PCD. The NormaTec PCD is FDA cleared for treatment of venous insufficiency, chronic wounds, lymphadema and prevention of DVT.

Aneurysm Screening



Aortic aneurysm, caused by a weakness in the wall of the aorta, kills more than 15,000 Americans each year. As the 15th leading cause of death and the 10th leading cause of death for those over age 70, the prevalence of abdominal aortic aneurysm (AAA) increases with age and among smokers and ex-smokers, and is four times more common in men. Symptoms include abdominal pain or lower back pain, sometimes radiating to the groin, or once an aneurysm has burst, symptoms are severe back or abdominal pain, paleness and signs of shock. Because three out of four aneurysm patients are asymptomatic when diagnosed, ultrasound screening can save lives.

Risk factors:

- Smoking
- Male gender
- Family history
- Atherosclerosis
- Age 50+
- Hypertension

Screening Recommendations:

- All men age 65+ who have ever smoked
- Women age 65+ who have ever smoked and have family history of aortic aneurysm

For more information about screening for abdominal aortic aneurysms, please call the Roper St. Francis Vascular Lab at 724-2059.